Statement of Basis - Narrative
NSR Permit

Type of Permit Action: Regular-New

Facility: **ConocoPhillips - Zia Hills Central Facility**
Company: ConocoPhillips Company
Permit No(s).: 7746M8
Tempo/IDEA ID No.: 38334 - PRN20210001
Permit Writer: Asheley Coriz

Fee Tracking (not required for Title V)

Tracking	**NSR tracking entries completed:** [] Yes [X] No-Teleworking
	NSR tracking page attached to front cover of permit folder: [] Yes [X] No-Teleworking
	Paid Invoice Attached: [X] Yes [] No
	Balance Due Invoice Attached: [] Yes [X] No
	Invoice Comments: Paid in full (status date of 3/31/2021 in TEMPO)

Permit Review	**Date to Enforcement:** 04/27/2021	**Date of Enforcement Reply:** 8/26/2021
	Date to Applicant: 04/27/2021	**Date of Applicant Reply:** 5/4/2021
	Date to EPA: N/A	**Date of EPA Reply:** N/A
	Date to Supervisor: 5/4/2021	

1.0 Plant Process Description:

Gas from well sites enter the facility through a slug catcher. The site uses natural gas engines to compress the gas for sales and gas lift, including one Caterpillar 3516J and six (6) Caterpillar 3606A4 engines (ENG1-ENG3, ENG5-ENG8). The Caterpillar engines are equipped with oxidation catalysts to reduce CO, VOC, and formaldehyde emissions. During compressor downtime or during an emergency, a flare (FL1) is used to flare high pressure gas. If two of the compressors go down, the facility is automatically shut in, limiting the volume of gas flared. Gas is dehydrated using triethylene glycol dehydration units (DEHY1-DEHY4). The glycol still vent vapors are routed to condensers. Flash tank and uncondensed vapors are burned in the glycol regenerator burners (RB1-RB4). Dehydrated gas is used for gas lift or transferred to a gas sales line.

Liquids generated from the slug catcher and compressor dumps are routed to a line heater (LH1), then to an overhead gas scrubber (OHS1). These units are used to flash the liquids and route gas to sales via by a redundant vapor recovery system (VRU1-VRU2). One VRU serves as a backup to the other in the event one unit shuts down. Water is routed to a water degassing vessel (WDGV1) and oil is routed to an oil tank (OT5) prior to being piped to the stabilizers. Vapors from both are carried to sales via VRU1-VRU2.

Oil from well sites enters the facility through inlet separators and into three (3) stabilizers (STAB1-STAB3). Gas from the stabilizer vessels is mixed with the gas from the inlet separator and routed to the inlet of the compressors. The facility is designed such that the stabilizer and inlet separator gas always flows to sales. Oil then flows to four (4) sales tanks (OT1-OT4) controlled by a VRU1-VRU2. During VRU

downtime, these streams are routed a redundant flare system (FL2-FL3). Oil is shipped offsite via pipeline LACT.

Water from well sites is routed to WDGV1 then to (two (2) gun barrel separators (GB1- GB2), which skim any remaining oil from the incoming water. The water then flows to produced water tanks (WT1-WT8) for temporary storage prior to being piped offsite. Any skimmed oil is routed to two slop oil tanks (ST1-ST2). Slop oil is routed back to the stabilizer vessels. Water degas vessel, gun barrel, and slop tank vapors are controlled using VRU1-VRU2, with vapors routed to FL2-FL3 during VRU downtime. Water is piped offsite.

2.0 Description of this Modification:

This site is converting from a GCP-O&G permitted facility to a Regular-New NSR facility.

ConocoPhillips Company (COP) is submitting this New Source Review (NSR) permit application for the Zia Hills Central Facility in accordance with 20.2.72.200.A.1 NMAC. COP plans to increase production to 18,503 barrels of oil per day (BOPD) and 120 million standard cubic feet per day (MMscfd). The production increase will require utilization of the third and fourth triethylene glycol dehydrators (DEHY3-DEHY4) and full time use of the third stabilizer (STAB3).

Oil, gas, and water flow separately into the site. Gas is dehydrated then reinjected for gas lift or compressed to the sales line. Oil is stabilized then temporarily stored in tanks before being sold via pipeline. Water is processed, then temporarily stored before being shipped offsite via pipeline. A detailed process description is provided in Section 10.

SSM emissions associated with compressor or VRU downtime are represented at the flare and included with normal operations. Emissions associated with engine maintenance (blowdown and starter vents) are included with SSM emissions. Tank cleanout emissions are also included. Ten (10) tons of VOC emissions related to malfunctions are also included.

3.0 Source Determination:

1. The emission sources evaluated include:
    - ENG1
    - ENG2-ENG3, ENG5-ENG8
    - OT1-OT4
    - OT5
    - WT1-WT8
    - GB1-GB2
    - ST1-ST2
    - FL1
    - FL2/FL3
    - STAB1-STAB3
    - LH1
    - RB1-RB2
    - RB3-RB4
    - DEHY1-DEHY2
    - DEHY3-DEHY4
    - VRT1

- VRU1
- VRU2
- WDGV1
- OHS1
- SSM
- FUG
- MF

2. Single Source Analysis:

A. SIC Code: Do the facilities belong to the same industrial grouping (i.e., same two-digit SIC code grouping, or support activity)? **Yes**

B. Common Ownership or Control: Are the facilities under common ownership or control? **Yes**

C. Contiguous or Adjacent: Are the facilities located on one or more contiguous or adjacent properties? **Yes**

3. Is the source, as described in the application, the entire source for 20.2.70, 20.2.72, 20.2.73, or 20.2.74 NMAC applicability purposes? **Yes**

4.0 PSD Applicability:

A. The source, as determined in 3.0 above, is a minor source before and after this modification.

5.0 History (In descending chronological order, showing NSR and TV): *The asterisk denotes the current active NSR and Title V permits that have not been superseded.

Permit Number	Issue Date	Action Type	Description of Action (Changes)
7746M8*	02/11/22	NSR Regular-New	An increase in production as well as the addition of the DEHY3, DEHY4, RB3, RB4 units as well as the full time use of the STAB3 unit.
7746M7	10/30/20	GCP-O&G Revision	The removal of ENG4. Addition of VRT1, FL2/FL3, VRU2, WDGV1, OHS1 and the request of malfunction (MF) emissions.
7746M6	07/10/20	GCP-O&G Revision	Like-kind replacement of GB1 & GB2 units.
7746M5	05/01/20	GCP-O&G Revision	Addition of LH1 unit.
7746M4	01/03/20	GCP-O&G Revision	The removal of DEHY3, DEHY4, RB3, and RB4 units.
7746M3	10/02/19	GCP-O&G Revision	Modification to include water and oil production as well as the addition of units ENG5 and ENG6. DEHY3 and DEHY4 are not operational.

5.0 **History (In descending chronological order, showing NSR and TV):** *The asterisk denotes the current active NSR and Title V permits that have not been superseded.

Permit Number	Issue Date	Action Type	Description of Action (Changes)
7746M2	08/02/19	GCP-O&G Revision	This permit application requests modification of GCP-O&G-7746-M1. The primary purpose of the application is to swap engine types and add flaring. Instead of three (3) 3516ULBs (ENG1-ENG3) and one (1) 3408TA (ENG4), there is one (1) 3516J (ENG1), two (2) 3606A4s (ENG2-ENG3), and one (1) F18GL (ENG4). In addition, one oil tank (OT5) and two slop tanks (ST1-ST2) were added and one heater (AUXH) and the tank VRU (TKVRU) were removed. For current operations, two descriptions are provided below. All equipment was constructed but the site does not currently produce liquids. All of the equipment constructed onsite is included here, even though some of the equipment will have no emissions since it is not operating.
7746M1	06/08/18	GCP-O&G New	New GCP-O&G Permit. Conversion from a GCP-4 to a GCP-O&G.
7746	04/02/18	GCP-4	New GCP-4 Permit.

6.0 **Public Response/Concerns:** As of March 12, 2021, this permit writer received the initial public comments/concerns. The second public comments/concerns were received on July 16, 2021.

7.0 **Compliance Testing:**

*As indicated within Section 17 of the application.

Compliance Test History Table

Unit No.	Test Description	Test Date	Emission Unit No.
811252	NSPS JJJJ Test	06/06/2019	ENG1
811355	NSPS JJJJ Test	02/24/2021	ENG2
412951	NSPS JJJJ Test	02/24/2021	ENG3
811356	NSPS JJJJ Test	02/25/2021	ENG5
811357	NSPS JJJJ Test	02/25/2021	ENG6
413049	NSPS JJJJ Test	02/25/2021	ENG7
413029	NSPS JJJJ Test	04/01/2021	ENG8

Unit No.	Compliance Test	Test Dates
ENG1-3, ENG5-8	Periodic Emissions Testing: Quarterly Portable Analyzer Test for NO_x and CO	Quarterly
ENG1-3, ENG5-8	40 CFR 60 Subpart OOOOa requirements	Per OOOOa

ENG1-3, ENG5-8	40 CFR 60 Subpart JJJJ requirements	Per JJJJ
ENG1-3, ENG5-8	40 CFR 63 Subpart ZZZZ requirements	Per ZZZZ

8.0 Startup and Shutdown:

A. If applicable, did the applicant indicate that a startup, shutdown, and emergency operational plan was developed in accordance with 20.2.70.300.D(5)(g) NMAC? **N/A**
B. If applicable, did the applicant indicate that a malfunction, startup, or shutdown operational plan was developed in accordance with 20.2.72.203.A.5 NMAC? **Yes**
C. Did the applicant indicate that a startup, shutdown, and scheduled maintenance plan was developed and implemented in accordance with 20.2.7.14.A and B NMAC? **Yes**
D. Does the facility have emissions due to routine or predictable startup, shutdown, and maintenance? If so, have all emissions from startup, shutdown, and scheduled maintenance operations been permitted? **Yes**

9.0 Compliance and Enforcement Status: As of August 26, 2021, Teri Waldron in Compliance and Enforcement (C&E) confirmed that "There is no outstanding notice of violation and no settlement agreement for which all actions have not been completed. Conditions from a settlement agreement, do not need to be addressed at the WEG Hearing".

10.0 Modeling:

Permit No. 7746M8
Report Date: 4/19/2021
NMEV/AQB Modeler: Angela Raso
Pollutants Modeled: CO, NO_2, SO_2, PM_{10}, and $PM_{2.5}$

Permit Conditions:

No additional conditions are required by this modeling.

Conclusion:

This modeling analysis demonstrates that operation of the facility described in this report neither causes nor contributes to any exceedances of applicable air quality standards. The standards relevant at this facility are NAAQS for CO, NO2, PM2.5, PM10 and SO2; NMAAQS for CO, NO2, and SO2; and Class I and Class II PSD increments for NO2, PM2.5, PM10, and SO2.

Action: The permit can be issued based on this modeling analysis.
Modeling report submitted by Bruce Ferguson (dated 1/11/2021)
The air quality analysis demonstrates compliance with applicable regulatory requirements.
Model(s) Used: AERMOD version 19191 was used to run the modeling analysis.

Note: Complete modeling input and output files can be made available and are located in the Modeling Archives in the folder, "7746M8_Conoco Phillips_Zia Hills Central Facility".

11.0 State Regulatory Analysis(NMAC/AQCR):

STATE REGU-LATIONS Citation 20 NMAC	**Title**	**Applies (Y/N)**	**Unit(s) or Facility**	**Justification:**
2.1	General Provisions	Yes	Entire Facility	The facility is subject to Title 20 Environmental Protection Chapter 2 Air Quality of the New Mexico Administrative Code so is subject to Part 1 General Provisions, Update to Section 116 of regulation for Significant figures & rounding. Applicable with no permitting requirements.
2.3	Ambient Air Quality Standards	Yes	Entire Facility	**NSR:** 20.2.3 NMAC is a SIP approved regulation that limits the maximum allowable concentration of Sulfur Compounds, Carbon Monoxide and Nitrogen Dioxide.
2.7	Excess Emissions	Yes	Entire Facility	Applies to all facilities' sources
2.38	Hydrocarbon Storage Facilities	Yes	OT1-OT4	20.2.38 NMAC This regulation could apply to storage tanks at petroleum production facilities, processing facilities, tanks batteries, or hydrocarbon storage facilities. The site is subject to 20.2.38.109 and 112. The site uses a VRU/Flare vent system to control emissions.
2.61	Smoke and Visible Emissions	Yes	ENG1-3, ENG5-8, STAB1-STAB3, LH1, RB1-RB4, FL1-FL3	This regulation that limits opacity to 20% applies to Stationary Combustion Equipment, such as engines, boilers, heaters, and flares unless your equipment is subject to another state regulation that limits particulate matter such as 20.2.19 NMAC (see 20.2.61.109 NMAC).
2.70	Operating Permits	No	N/A	The source is not a Title V Major Source as defined at 20.2.70.7 NMAC.
2.71	Operating Permit Fees	No	N/A	The facility is not a major source of criteria pollutants. Fugitive VOC emissions are not included in the source determination.
2.72	Construction Permits	Yes	Entire Facility	Section 200.A.1 NMAC PER **>** 10 pph or 25 tpy for a criteria pollutant, or NSR Permits are the applicable requirement, including 20.2.72 NMAC.
2.73	NOI & Emissions Inventory Requirements	Yes	Entire Facility	Applicable to all facilities that require a permit. PER **>** 10 tpy for a regulated air contaminant.
2.75	Construction Permit Fees	Yes	Entire Facility	This facility is subject to 20.2.72 NMAC.

STATE REGU-LATIONS Citation 20 NMAC	**Title**	**Applies (Y/N)**	**Unit(s) or Facility**	**Justification:**
2.77	New Source Performance Standards	Yes	See Sources subject to 40 CFR 60	Applies to any stationary source constructing or modifying and which is subject to the requirements of 40 CFR Part 60.
2.78	Emissions Standards for HAPs	No	N/A	This regulation applies to all sources emitting hazardous air pollutants, which are subject to the requirements of 40 CFR Part 61. The facility does not fit into any of the source categories.
2.79	Permits in Nonattainment Areas	No	N/A	This facility is not located in a nonattainment area.
2.82	MACT Standards for Source Categories of HAPs	Yes	See sources subject to 40 CFR 63	This regulation applies to all sources emitting hazardous air pollutants, which are subject to the requirements of 40 CFR Part 63.

12.0 Federal Regulatory Analysis:

Federal Regulation	**Title**	**Applies (Y/N)**	**Unit(s) or Facility**	**Comments**
Air Programs Subchapter C (40 CFR 50)	National Primary and Secondary Ambient Air Quality Standards	Yes	Entire Facility	Independent of permit applicability; applies to all sources of emissions for which there is a Federal Ambient Air Quality Standard.
NSPS Subpart A (40 CFR 60)	General Provisions	Yes	See sources subject to a Subpart in 40 CFR 60	Applies if any other subpart applies.
40 CFR Part 60 Subpart JJJJ (Quad -J)	Standards of Performance for Stationary Spark. Ignition Internal Combustion Engines	Yes	ENG1-3, ENG5-8	The site is subject to the emission limits in Table 1.
NSPS 40 CFR Part 60 Subpart OOOO (Quad -O)	Standards of Performance for Crude Oil and Natural Gas Production, Transmission and Distribution for which construction, modification or	No	N/A	The site post-dates Subpart OOOO.

Federal Regulation	Title	Applies (Y/N)	Unit(s) or Facility	Comments
	reconstruction commenced after August 23, 2011 and before September 18, 2015			
NSPS 40 CFR Part 60 Subpart OOOOa	Standards of Performance for Crude Oil and Natural Gas Facilities for which Construction, Modification or Reconstruction Commenced After September 18, 2015	Yes	FUG, ENG1-3, ENG5-8	**See 60.5360a** The oil and water storage tanks were constructed after the applicability date of the rule; however, emissions are limited by permit to less than 6 tpy. The site uses low-bleed pneumatic controllers. The compressors comply with the requirements of 60.5385a. The site is subject to leak monitoring requirements for fugitive components specified in 60.5397a.
NESHAP Subpart A (40 CFR 61)	General Provisions	No	See sources subject to a Subpart in 40 CFR 61	Applies if any other subpart applies.
MACT Subpart A (40 CFR 63)	General Provisions	Yes	See sources subject to a Subpart in 40 CFR 63	Applies if any other subpart applies.
40 CFR 63.760 Subpart HH	Oil and Natural Gas Production Facilities –	Yes	DEHY1-DEHY4	AREA SOURCE (Minor for HAPs): The facility contains affected sources (TEG glycol dehydrators, 63.760(b)(2)). However, as actual benzene emissions are less than one ton per year (63.764(e)(1)(ii)), the dehydrators are exempt, and the records of the determination must be maintained as required in §63.774(d)(1).
40 CFR 63 Subpart ZZZZ (Quad Z)	National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion	Yes	ENG1-3, ENG5-8	ENG1-3 and ENG5-8 comply with NSPS JJJJ to comply with NESHAP ZZZZ.

Federal Regulation	Title	Applies (Y/N)	Unit(s) or Facility	Comments
	Engines (RICE MACT)			

13.0 Exempt and/or Insignificant Equipment that do not require monitoring:

NSR Exempt Equipment: N/A

14.0 New/Modified/Unique Conditions (Format: Condition#: Explanation):

1. Date of Monitoring Protocol used for Engines 11Dec2019
   A. Condition A201.D: Similar to Condition A201.H in NSR 6036M5
2. Date of Monitoring Protocol used for Glycol Dehydrators 12Feb2018
   A. Condition A202.D: Similar to Condition A202.C in NSR 6036M5
3. Date of Monitoring Protocol used for Tanks 19Sep2017
   A. Condition A203.F: Similar to Condition A203.D in NSR 4982M1
4. Date of Monitoring Protocol used for Heaters/Reboilers 18Aug2017
5. Date of Monitoring Protocol used for Flares 20April2021
   A. Condition A206.B & A206.D: Similar to Condition A206.B & A206.D in NSR 4982M1
   B. Condition A206.C: Similar to Condition A206.C in NSR 7699 & NSR 4982M1

15.0 Permit specialist's notes to other NSR or Title V permitting staff concerning changes and updates to permit conditions.

A. SSM and Malfunction Condition A107.C: Similar to Condition A107.B in NSR 4982M1
B. NSR_Permit_PartA_Master_22Nov2019 Template was utilized
C. NSR_Permit_PartsB&C_Master_12Jan2021 Template was utilized
D. This permit was crafted using NSR permits 4982M1, 7699, and 6036M5.
E. On August 26, 2021, Vivian Bermudez from ConocoPhillips Company provided an explanation via email regarding the pneumatic devices/pumps as to state they are not to be listed under exempted equipment as they are air driven and they are not defined as a source as they don't have emissions or a potential to emit.